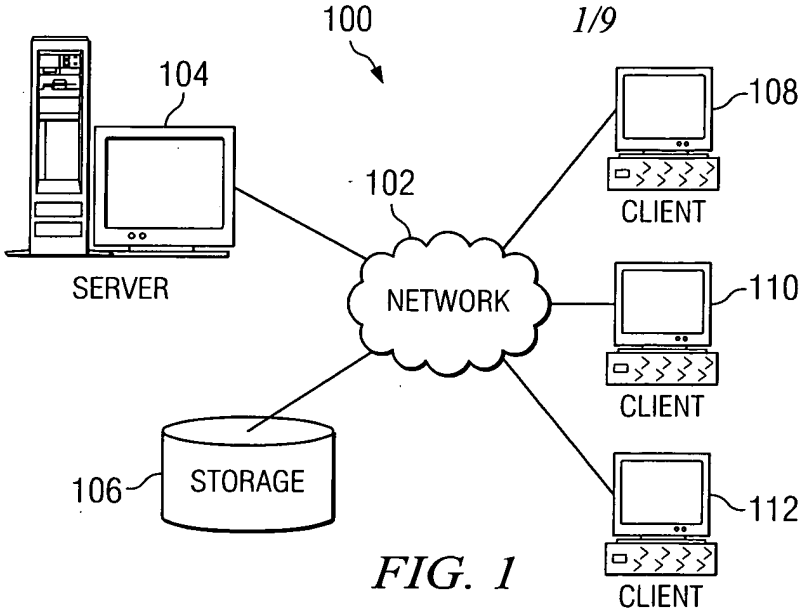

FIG. 1

```
0 AC_test_pidtid
0 > MAIN
0 > A
1 > B
2 < B
2 > B
3 > C
4 < C
4 < B
4 < A
4 > B
5 > A
6 > C
7 < C
7 > X
7 > E
8 < E
8 > F
9 < F
9 > G
10 < G
10 < X
10 < A
10 < B
10 < MAIN
```

FIG. 4

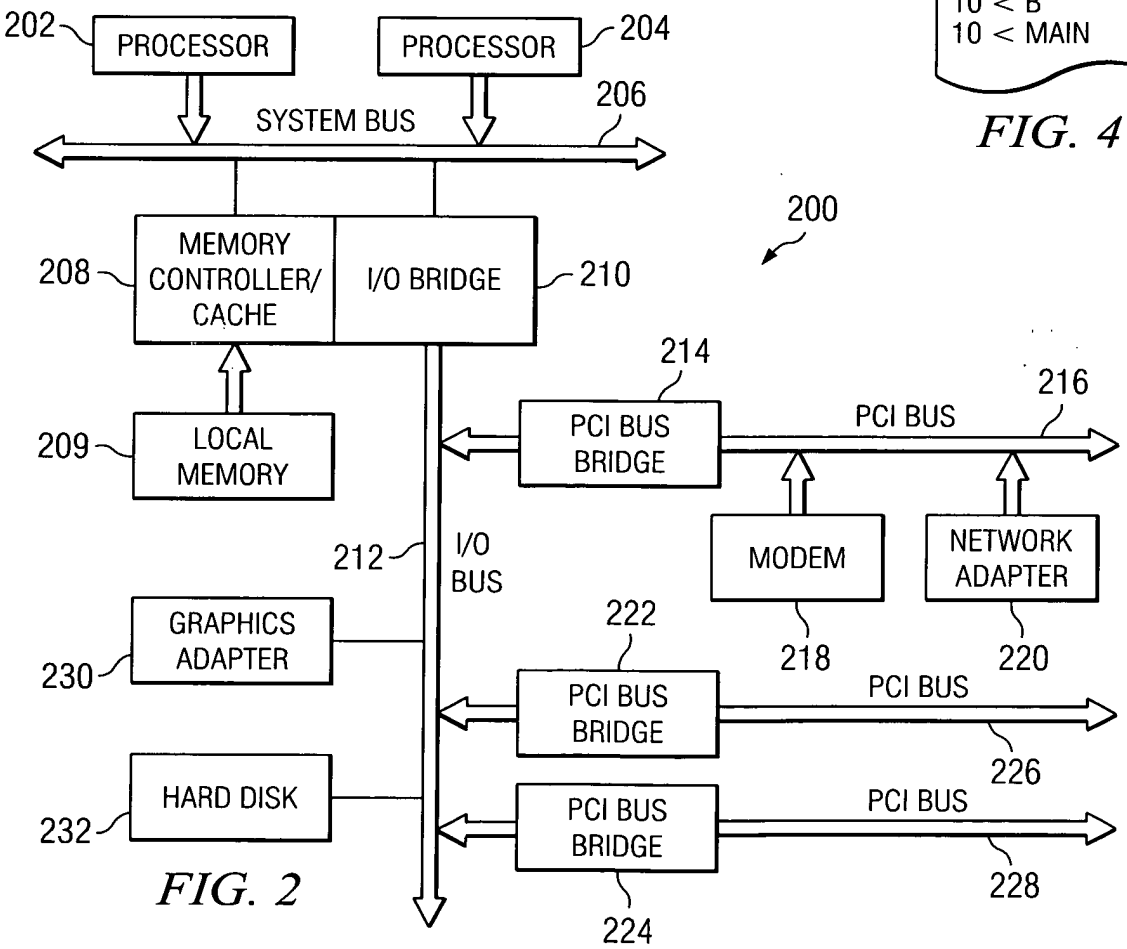

FIG. 2

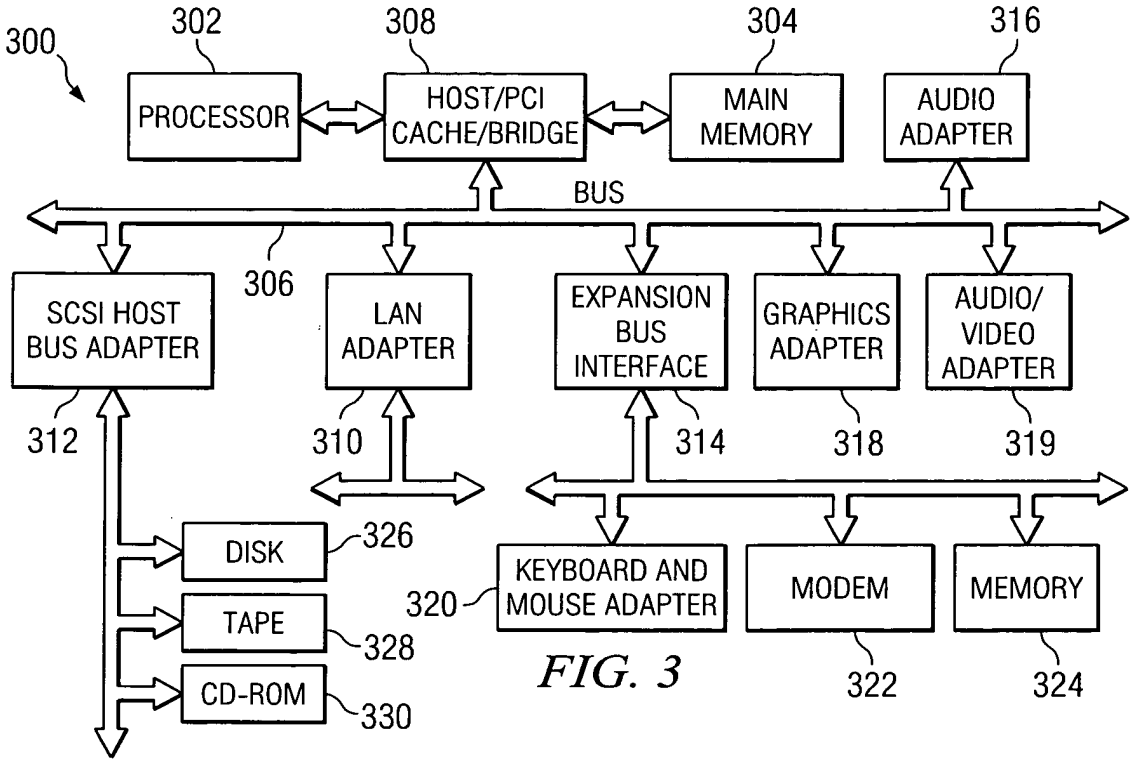
300
302
308
304
316
PROCESSOR
HOST/PCI CACHE/BRIDGE
MAIN MEMORY
AUDIO ADAPTER
BUS
306
SCSI HOST BUS ADAPTER
LAN ADAPTER
EXPANSION BUS INTERFACE
GRAPHICS ADAPTER
AUDIO/ VIDEO ADAPTER
312
310
314
318
319
DISK
326
TAPE
328
CD-ROM
330
320
KEYBOARD AND MOUSE ADAPTER
MODEM
MEMORY
322
324

FIG. 3

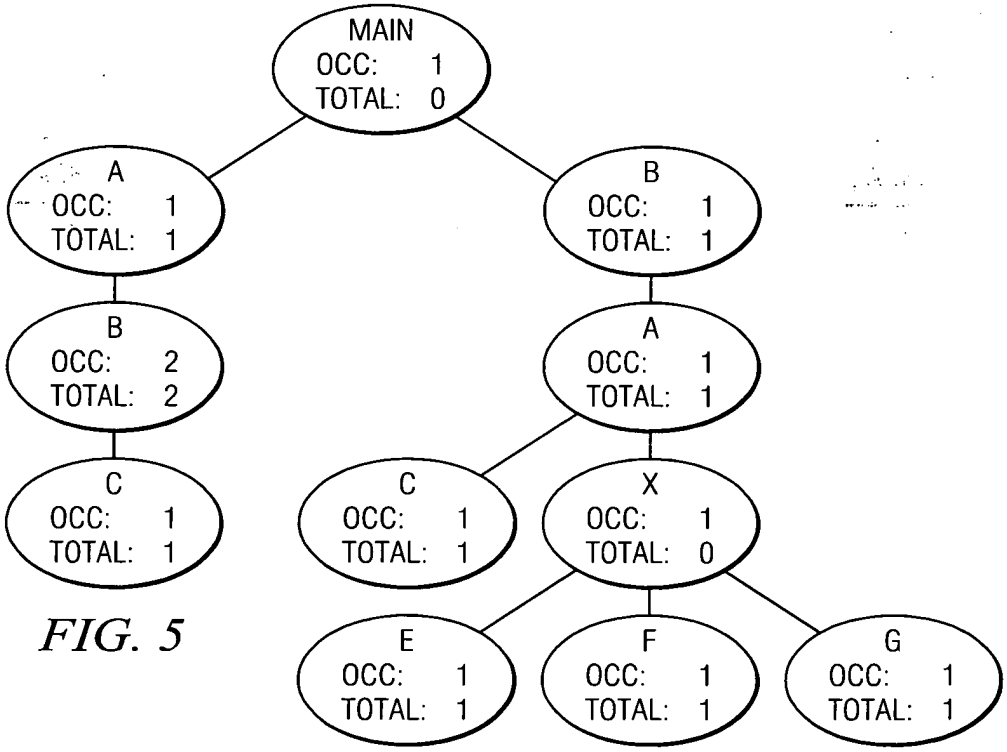
MAIN
OCC: 1
TOTAL: 0
A
OCC: 1
TOTAL: 1
B
OCC: 1
TOTAL: 1
B
OCC: 2
TOTAL: 2
A
OCC: 1
TOTAL: 1
C
OCC: 1
TOTAL: 1
C
OCC: 1
TOTAL: 1
X
OCC: 1
TOTAL: 0
E
OCC: 1
TOTAL: 1
F
OCC: 1
TOTAL: 1
G
OCC: 1
TOTAL: 1

FIG. 5

SOURCE	CALLS	%BASE	%CUM	FUNCTION
SELF	1	0.00	100.00	[0] AC_test_pidtid
CHILD	1	0.00	100.00	MAIN
PARENT	1	0.00	100.00	AC_test_pidtid
SELF	1	0.00	100.00	[1] MAIN
CHILD	1	10.00	60.00	B
CHILD	1	10.00	40.00	A
PARENT	2	20.00	30.00	A
PARENT	1	10.00	60.00	MAIN
SELF	3	30.00	90.00	[2] B
CHILD	1	10.00	50.00	A
CHILD	1	10.00	10.00	C
PARENT	1	10.00	40.00	MAIN
PARENT	1	10.00	50.00	B
SELF	2	20.00	90.00	[3] A
CHILD	2	20.00	30.00	B
CHILD	1	0.00	30.00	X
CHILD	1	10.00	10.00	C
PARENT	1	0.00	30.00	A
SELF	1	0.00	30.00	[4] X
CHILD	1	10.00	10.00	E
CHILD	1	10.00	10.00	G
CHILD	1	10.00	10.00	F
PARENT	1	10.00	10.00	A
PARENT	1	10.00	10.00	B
SELF	2	20.00	20.00	[5] C
PARENT	1	10.00	10.00	X
SELF	1	10.00	10.00	[6] E
PARENT	1	10.00	10.00	X
SELF	1	10.00	10.00	[7] F
PARENT	1	10.00	10.00	X
SELF	1	10.00	10.00	[8] G

FIG. 6

TOTAL: 10 CPU SECONDS

Lv	RL	CALLS	%BASE	%CUM	INDENT HkKey_HkName
0	1	1	0.00	100.00	AC_test_pidtid
1	1	1	0.00	100.00	- MAIN
2	1	1	10.00	40.00	--A
3	1	2	20.00	30.00	---B
4	1	1	10.00	10.00	----C
2	1	1	10.00	60.00	--B
3	1	1	10.00	50.00	---A
4	1	1	10.00	10.00	----C
4	1	1	0.00	30.00	----X
5	1	1	10.00	10.00	----+E
5	1	1	10.00	10.00	----+F
5	1	1	10.00	10.00	----+G

FIG. 7

TRACE DATA FOR
EXECUTION OF FIRST BUILD
OF COMPUTER PROGRAM

```
0 pidtid    xyz
3 > A
2 > B
7 < B
1 > C
5 > D
7 < D
```

FIG. 8A

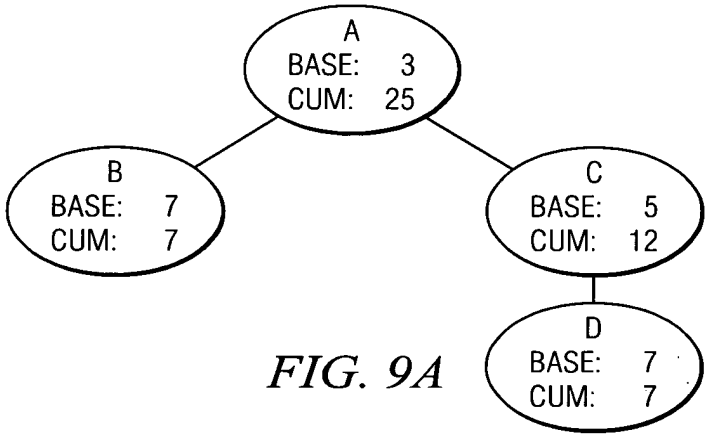

FIG. 9A

TRACE DATA FOR
EXECUTION OF SECOND BUILD
OF COMPUTER PROGRAM

```
0 pidtid    xyz
3 > A
2 > B
7 < B
1 > C
5 > E
6 < E
```

FIG. 8B

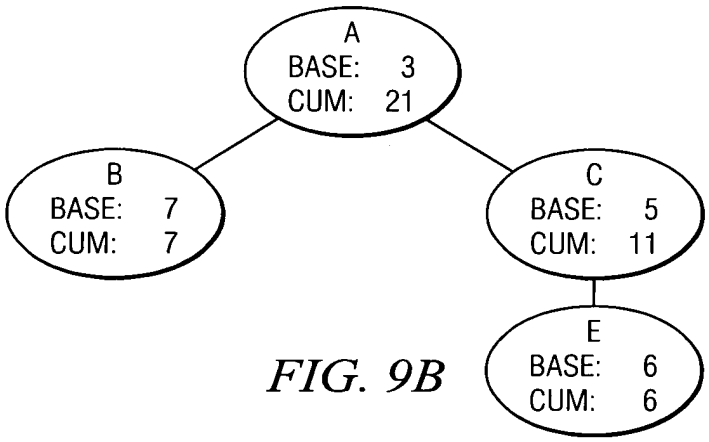

FIG. 9B

TOTAL: 25 CPU SECONDS

Lv	RL	CALLS	%BASE	%CUM	BASE	CUM	INDENT HkKey_HkName
0	1	2	12.00	100.00	3	25	xyz_pidtid
1	1	1	12.00	88.00	3	22	- A
2	1	1	28.00	28.00	7	7	--B
2	1	1	20.00	48.00	5	12	--C
3	1	1	28.00	28.00	7	7	---D

FIG. 10A

TOTAL: 24 CPU SECONDS

Lv	RL	CALLS	%BASE	%CUM	BASE	CUM	INDENT HkKey_HkName
0	1	2	12.50	100.00	3	24	xyz_pidtid
1	1	1	12.50	87.50	3	21	- A
2	1	1	29.17	29.17	7	7	--B
2	1	1	20.83	45.83	5	11	--C
3	1	1	25.00	25.00	6	6	---E

FIG. 10B

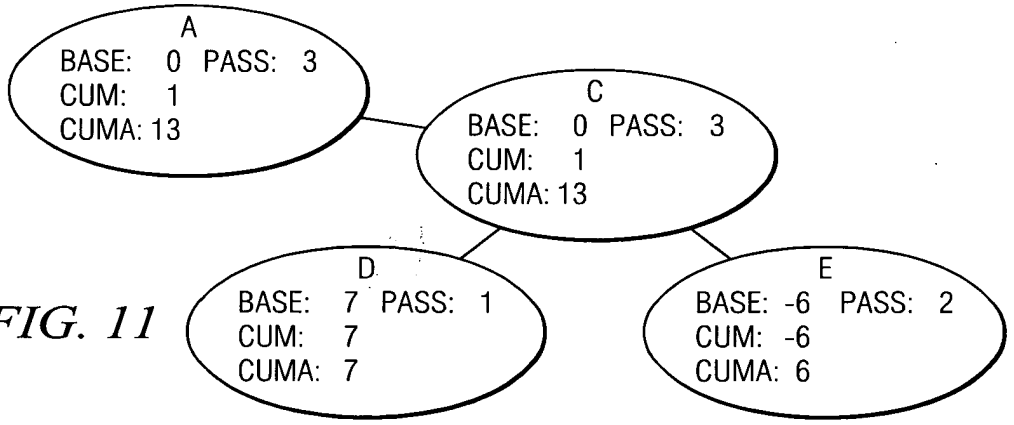

FIG. 11

TOTAL: 25 CPU SECONDS IN TREE A USED AS BASE FOR PERCENTAGES

Lv	RL	CALLS	%BASE	%CUM	BASE	CUM	CumA	PASS	INDENT HkKey_HkName
0	1	0	0.00	4.00	0	1	13		difference_pidtid
1	1	0	0.00	4.00	0	1	13	3	- A
2	1	0	0.00	4.00	0	1	13	3	--C
3	1	1	28.00	28.00	7	7	7	1	---D
3	1	-1	-24.00	-24.00	-6	-6	6	2	---E

FIG. 12

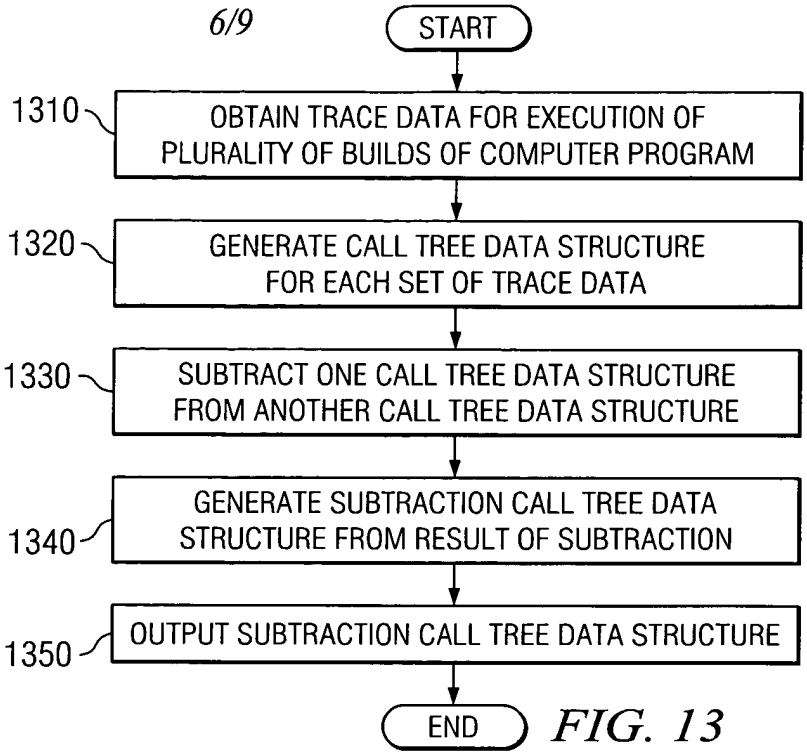

FIG. 13

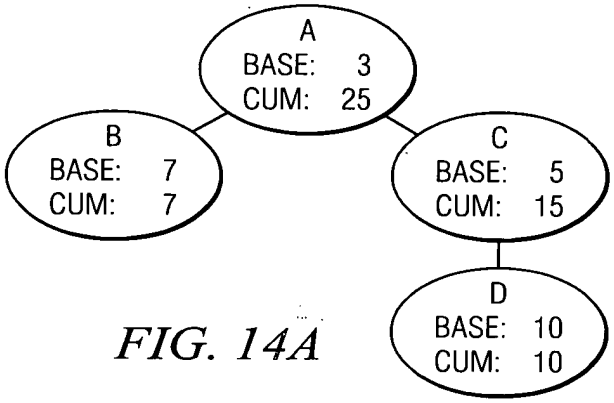

FIG. 14A

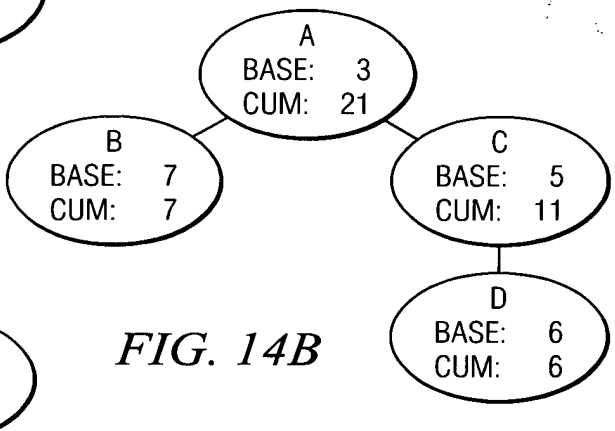

FIG. 14B

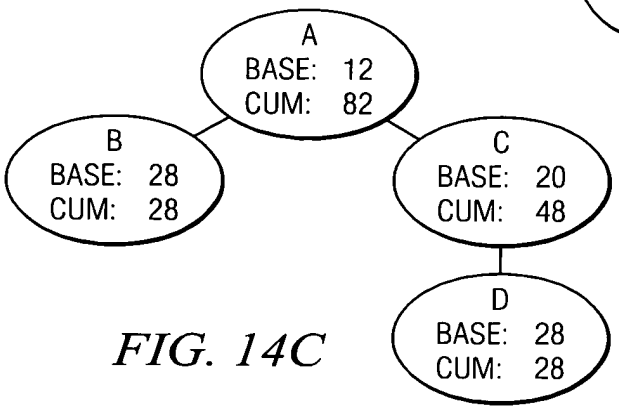

FIG. 14C

Lv	RL	CALLS	%BASE	%CUM	BASE	CUM	CumA	INDENT HkKey_HkName
0	1	3	12.16	100.00	9	74	74	bigtree_pidtid
1	1	3	12.16	87.84	9	65	65	- A
2	1	3	28.38	28.38	21	21	21	--B
2	1	3	20.27	47.30	15	35	35	--C
3	1	2	18.92	18.92	14	14	14	---D
3	1	1	8.11	8.11	6	6	6	---E

FIG. 15

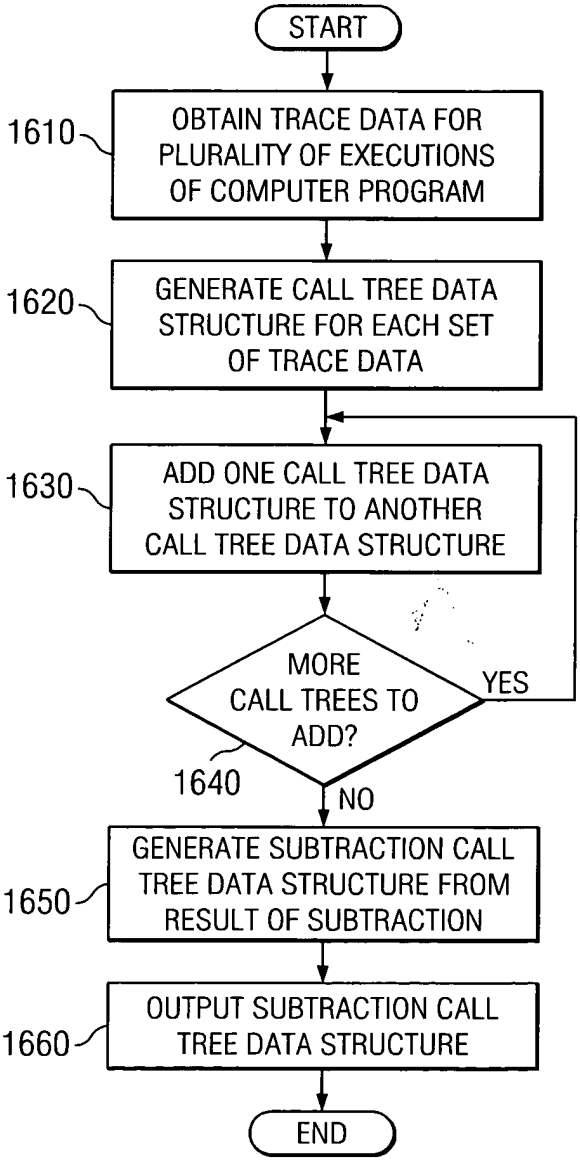

FIG. 16

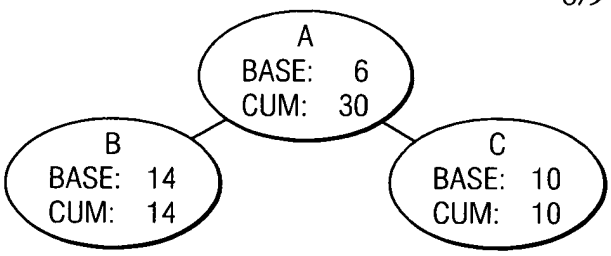

FIG. 17A

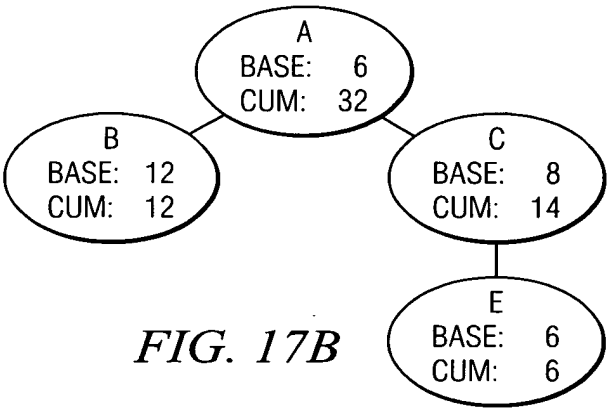

FIG. 17B

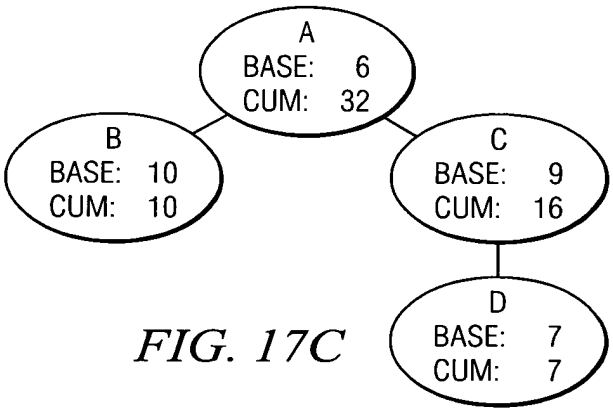

FIG. 17C

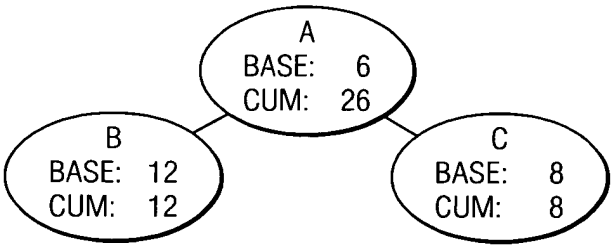

FIG. 18A

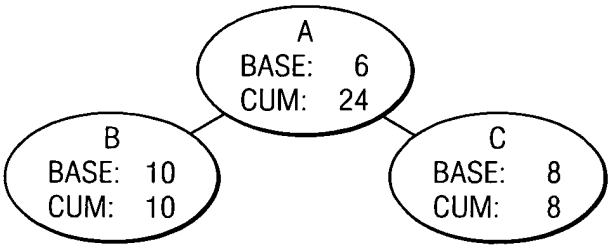

FIG. 18B

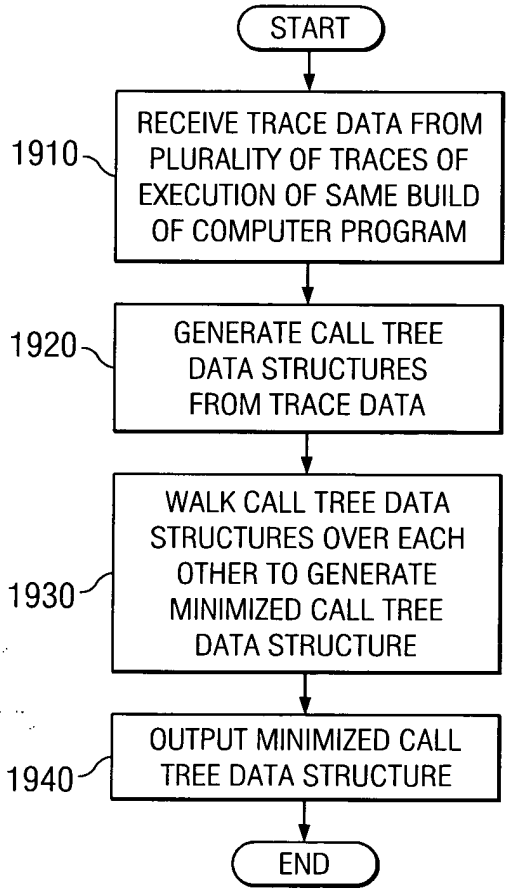
START
1910
RECEIVE TRACE DATA FROM PLURALITY OF TRACES OF EXECUTION OF SAME BUILD OF COMPUTER PROGRAM
1920
GENERATE CALL TREE DATA STRUCTURES FROM TRACE DATA
1930
WALK CALL TREE DATA STRUCTURES OVER EACH OTHER TO GENERATE MINIMIZED CALL TREE DATA STRUCTURE
1940
OUTPUT MINIMIZED CALL TREE DATA STRUCTURE
END

FIG. 19

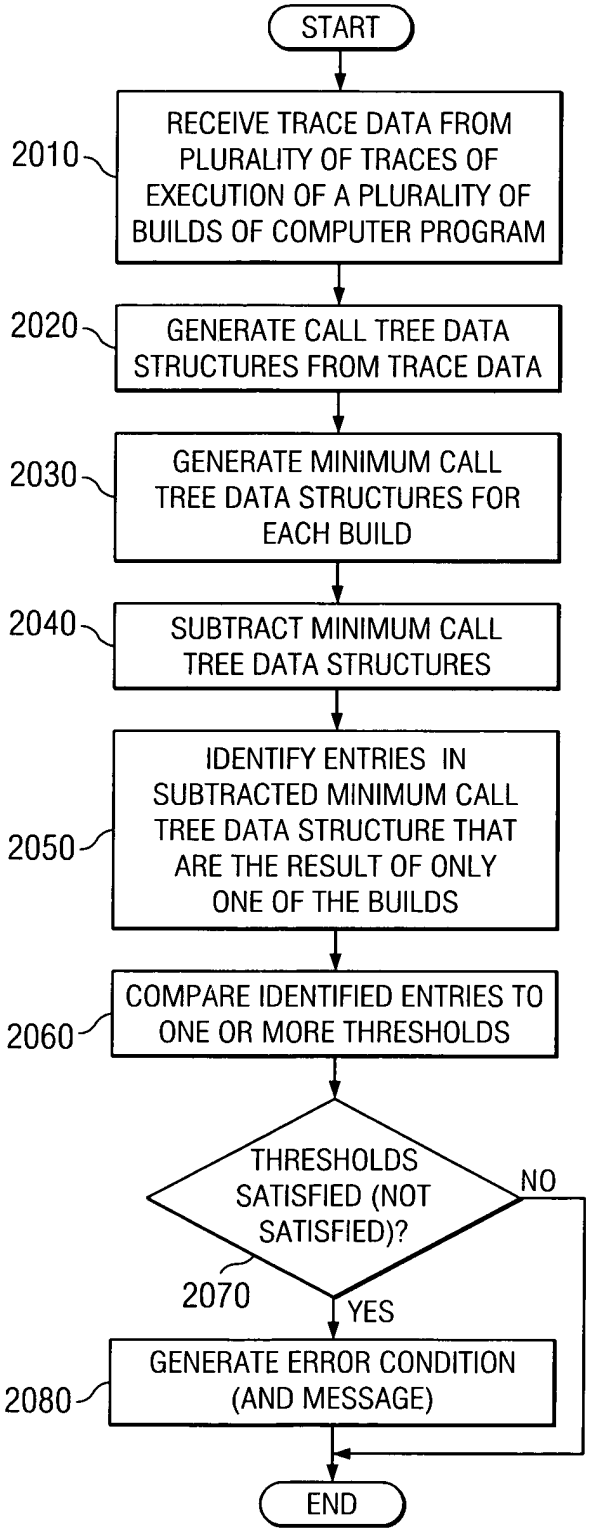
START
2010
RECEIVE TRACE DATA FROM PLURALITY OF TRACES OF EXECUTION OF A PLURALITY OF BUILDS OF COMPUTER PROGRAM
2020
GENERATE CALL TREE DATA STRUCTURES FROM TRACE DATA
2030
GENERATE MINIMUM CALL TREE DATA STRUCTURES FOR EACH BUILD
2040
SUBTRACT MINIMUM CALL TREE DATA STRUCTURES
2050
IDENTIFY ENTRIES IN SUBTRACTED MINIMUM CALL TREE DATA STRUCTURE THAT ARE THE RESULT OF ONLY ONE OF THE BUILDS
2060
COMPARE IDENTIFIED ENTRIES TO ONE OR MORE THRESHOLDS
THRESHOLDS SATISFIED (NOT SATISFIED)?
NO
2070
YES
2080
GENERATE ERROR CONDITION (AND MESSAGE)
END

FIG. 20